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NINTH ANNUAL REPORT

OF THE

NEW YORK STATE

ABINET OF NATURAL HISTORY.

Library of the Museum

OF

COMPARATIVE ZOÖLOGY,

AT HARVARD COLLEGE, CAMBRIDGE, MASS.

Founded by private subscription, in 1861.

The gift of the New York State Cabinet

No. 4562.

NINTH ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY

OF THE

State of New-York,

ON THE

CONDITION OF THE STATE CABINET

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION

ANNEXED THERETO.

Made to the Senate, February 20, 1856.

ALBANY:
C. VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,
No. 407 Broadway.
1856.

State of New-York.

No. 112.

IN SENATE, FEB. 20, 1856.

NINTH ANNUAL REPORT.

TO THE HON. HENRY J. RAYMOND,

Lieutenant-Governor, and President of the Senate.

SIR:

I HAVE the honor to transmit the Annual Report of the Regents of the University, on the State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto.

I remain, very respectfully,
Your obedient servant,
G. Y. LANSING, *Chancellor*.

FEBRUARY 20, 1856.

REGENTS OF THE UNIVERSITY, 1856.

GERRIT Y. LANSING, *Chancellor.*
JOHN GREIG, *Vice-Chancellor.*
MYRON H. CLARK, Governor, *ex officio.*
HENRY J. RAYMOND, Lieutenant-Governor, *ex officio.*
JOEL T. HEADLEY, Secretary of State, *ex officio.*
VICTOR M. RICE, Superintendent of Public Instruction, *ex officio.*
GULIAN C. VERPLANCK, LL.D.
JOHN K. PAIGE.
ERASTUS CORNING.
PROSPER M. WETMORE.
JOHN L. GRAHAM.
JOHN M'LEAN.
GIDEON HAWLEY, LL.D.
DAVID BUEL.
JAMES S. WADSWORTH.
JOHN V. L. PRUYN, LL.D.
ROBERT CAMPBELL.
REV. SAMUEL LUCKEY, D.D.
ROBERT G. RANKIN.
JOHN N. CAMPBELL, D.D.
ERASTUS C. BENEDICT.
(Two vacancies.)
SAMUEL B. WOOLWORTH, *Secretary.*

STANDING COMMITTEES OF THE REGENTS,

SPECIALLY CHARGED WITH THE CARE OF THE STATE CABINET.

1855.

MYRON H. CLARK, *Governor.*
ELIAS W. LEAVENWORTH, *Secretary of State.*
ERASTUS CORNING.
ROBERT G. RANKIN.
JOHN K. PAIGE.

1856.

MYRON H. CLARK, *Governor.*
JOEL T. HEADLEY, *Secretary of State.*
ERASTUS C. BENEDICT.
REV. DR. CAMPBELL.
ERASTUS CORNING.

JOHN GEBHARD JUNIOR, *Curator.*
JAMES A. HURST, *Taxidermist.*

REPORT.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK,

The Regents of the University

RESPECTFULLY REPORT:

That the erection of a new building for the collections in Natural History on the site of the old one, rendered necessary the removal of these collections to such places as could be temporarily provided for them, and thus prevented any extended and systematic efforts for their increase. Some valuable additions, however, have been made, and something has been done toward a more complete exhibition of the Natural History of the State.

In the last report, allusion was made to the promise of a large collection of fish, native to the State, from Professor BAIRD, of the Smithsonian Institution. These have been received, and the catalogue is annexed to this report.

A collection of fresh water shells has also been received from Professor DEWEY, of the Rochester University. They have been collected principally from the waters of the western part of the State, though a few are from Ohio, and are valuable for the purposes of comparison.

The Curator continues his catalogue of newly discovered fishes inhabiting the State. He also reports the materials deposited with him during the past year, towards completing the Palæontology.

The Regents have looked forward with great interest to the completion of the building, the erection of which was directed by the last Legislature, for the joint occupancy of the museum of the State Agricultural Society, and the several cabinets of Natural History. It is understood that the part of the building assigned to the Agricultural Society meets their wants and wishes.

While the board to whom its construction was committed, undoubtedly intended to provide for the best scientific arrangement of the large collections which the State has at great expense caused to be made; it is found that such an arrrangement is quite impracticable with the present construction of a portion of the interior of the building.

What New-York has done in exploring its Geological structure, and in classifying and naming its rocks, has given the State an authority and character, in this department of science, which is acknowledged wherever the science is cultivated. The object of the collection is to exhibit on the floor of the room, by rocks and fossils gathered from every formation, their relative position in the order of real place. The collection will be almost worthless if otherwise exhibited; for it will not represent nature and truth. Under this condition of things, the Regents have not felt warranted in directing the arrangement of the collections in the building as now constructed. They have chosen to state the facts to the Legislature, rather than to attempt to do what they are confident would soon be directed to be undone; and to ask such an appropriation as will enable them to adapt the interior of the building to the purposes designed, and to erect the necessary cases for the preservation and proper exhibition of the collections, thus making such a display of the Natural resources of the State as will be a source of just pride to its citizens.

By Order of the Regents.

G. Y. LANSING, *Chancellor.*

S. B. WOOLWORTH, *Secretary.*

ACCOUNT CURRENT.

The Regents of the University, in account current with the appropriation for preserving and increasing the "State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto," and for defraying the incidental expenses of the same.

DR.

Date	Particulars	Amount
1854.		
Dec. 26.	To balance of former appropriation remaining in bank (See Senate Document of 1855, No. 40)	$736 84
1855.		
Oct. 9.	To annual appropriation from the Comptroller (in part)	200 00
		$936 84

CR.

Date	Particulars	Voucher	Amount
1854.			
Dec. 26.	By cash paid for removing De Rham collection	No. 1,	$5 63
1855.			
Mar. 2.	By cash paid J. A. Hurst, taxidermist, quarter's salary to March 1, 1855	No. 2,	50 00
April 30.	By cash paid for removing collection, to April 28	No. 3,	12 50
May 1.	By cash paid John Gebhard, for tooth of fossil elephant	No. 4,	11 00
May 5.	By cash paid for removing collection, to May 5	No. 5,	145 50
May 12.	do do do to May 12	No. 6,	160 00
May 19.	do do do to May 19	No. 7,	56 99
May 26.	By cash paid for alcohol and contingents	No. 8,	23 13
June 1.	By cash paid J. A. Hurst, quarter's salary	No. 9,	50 00
June 5.	By cash paid Professor S. F. Baird, for 82 specimens of fish, with jars and labels	No. 10,	100 00
July 12.	By cash paid for contingent expenses	No. 11,	9 65
Sept. 13.	By cash paid J. A. Hurst, quarter's salary	No. 12,	50 00
"	By cash paid J. A. Hurst, for mounting Great horned owl (presented) ...... $5 00 Female " " ...... 5 00 4 Buffalo bony pike, " 20 00	No. 13,	30 00
Sept. 15.	By cash paid rent of Mr. Hurst's room, May to Aug. 1855	No. 14,	21 00
Nov. 9.	do do do Aug. to Nov. 1855	No. 15,	21 00
Nov. 15.	By cash paid for contingent expenses	No. 16,	21 32
Dec. 1.	By cash paid J. A. Hurst, for quarter salary	No. 17,	50 00
	Balance to new account		119 72
			$936 84

(*COPY.*)

Albany City Bank. *Dec.* 31, 1855. I certify that there is the sum of one hundred and nineteen 72-100 dollars standing to the credit of the State Cabinet of Natural History, on the books of this bank.

(Signed) H. H. MARTIN, *Cashier.*

In behalf of the standing committee on the State Cabinet, I have examined the above account and find it correct. The payments have been made by order of the standing committee, and are accompanied with proper vouchers.

MYRON H. CLARK, *Chairman.*

CONTENTS OF THE APPENDIX.

A. Catalogue of the birds, reptiles, amphibians, fishes, and shells, added to the State Cabinet from January 1, 1855, to January 1, 1856; including the
  Catalogue by Professor S. F. Baird, of the fishes furnished to the State Cabinet by the Smithsonian Institution;
  The catalogue of newly discovered fishes inhabiting the State, continued from the last report, by the Curator; and the
  Catalogue of the fresh water shells, furnished to the State, by Professor C. Dewey, of Rochester.

B. Catalogue of minerals, geological specimens and fossils, added to the collection during the year.

C. Additions to the historical and antiquarian collection, during the year.

D. Materials received at the State Geological Rooms, since January 1, 1855, towards completing the Palæontology.

APPENDIX.

A.

CATALOGUE

OF THE

BIRDS, REPTILES, AMPHIBIANS, FISHES, AND SHELLS,

ADDED TO THE

STATE CABINET OF NATURAL HISTORY,

FROM

JANUARY 1, 1855, TO JANUARY 1, 1856.

BIRDS.

ORDER V. · LOBIPEDES.

FAMILY PODICIPIDÆ.

PODICEPS CORNUTUS. *Horned Grebe* (female).

DeKay's New-York Fauna, Part II, pa. 274, pl. 140, f. 305.

This specimen was shot in the Hudson River, at Port Schuyler, on the 8th day of February, 1855, by J. F. ROY, and presented to the State Collection by JAMES ROY, of West Troy.

REPTILES.

We publish with pleasure the following communication, from that indefatigable naturalist, Professor SPENCER F. BAIRD, at present the assistant secretary of the Smithsonian Institution, at Washington: from which it will be seen, that another species is added to the number of New-York serpents.

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., Oct. 5, 1855.

DEAR SIR — We received a day or two ago, from General WARD, of Sing-Sing, a specimen of the *Heterodon niger*, or *Black Viper*, caught by him on his place in that village. As this is the first published account of its existence in New-York, it may be well to place the fact on record in the next report of the New-

York State Cabinet. You will perhaps remember, that in my article on the serpents of New-York, published in the report for 1853,* I mentioned this as an additional species to be looked for along the southern border of the State.

The list of New-York serpents, with the present addition, now embraces eighteen species.

Yours truly,
SPENCER F. BAIRD.

JOHN GEBHARD JUNIOR, Albany.

As this species is not included in Dekay's Fauna of our State, we publish the following detailed description by Professor BAIRD, taken from the catalogue of North American Reptiles in the museum of the Smithsonian Institution.

HETERODON NIGER, *Troost.*— Black Viper.

SPEC. CHAR. Vertical plate as long as the occipitals. Rostral prominent. Dorsal rows of scales 25, the exterior smooth, the 2d row obsoletely carinated, the rest with the scales distinctly carinated, the carinæ extending quite to the tip. Uniform black above, slate-color beneath.

SYNONYMS.

Vipera nigra, CATESBY, Nat. Hist. Carol. II, 1743, 44. Pl. xliv.
Scytale niger, DAUD. Hist. Nat. Rept. V, 1799, 342.—HARL. Journ. Acad. Nat. Sc. Philad. V, 1827, 367; and Med. & Phys. Res. 1835, 130.
Coluber cacodemon, SHAW, Gen. Zool. III, 1802, 377. Pl. cii.
Coluber thraso, HARL. Med. & Phys. Res. 1835, 120.
Heterodon niger, TROOST. Ann. Lyc. Nat. Hist. N. York, III, 1836, 186.—? HOLBR. N. Amer. Herp. 1st ed. II, 1838, 105. Pl. xxiii; and 2d ed. III, 1842, 63. Pl. xvi.
Black Viper; Spreading Adder.

Postfrontals large, extending to the loral. Prefrontals smaller. Azygos rather large, separating the prefrontals entirely, and the postfrontals anteriorly : in a line with the rostral. Rostral broad. Keel acutely distinct. Scales on the back of head keeled, though obsoletely in those next to the occipital plates. The line from tip of snout to lower angle of posterior labial, crosses the lower part of the eye, whose centre is a little in advance of the middle of this line. Orbital chain of 9 plates. Loral triangular, truncated above. Nasals rather large, less developed than in *H. platyrhinos*. Upper labials 8; 3d – 6th in contact with suborbitals. Centre of eye above the juncture of the 4th and 5th.

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* See Seventh Annual Report, page 103.

Scales distinctly carinated, except the outer row, which is smooth, and the second, on which the carination is very obsolete, sometimes quite smooth. All the scales diminish gradually to the back, where they are quite linear; posteriorly, however, they are broader.

Color above and on the sides entirely dull black, beneath rather light slate-color, shading into milk-white on the chin and on the edge of the upper labials. The exterior row of scales shade gently from the color of the back to that of the belly.

The *Heterodon niger* bears quite a close relationship in the character of the plates and scales to *H. platyrhinos*, from which the principal difference lies in the color. Although this species greatly resembles in color the black variety of *H. atmodes*, they may be readily distinguished. The rostral of *H. niger* is well developed, high, broad, and with the dorsal carina acute and well marked. The carination on the scales back of the head is delicately distinct, as also upon the other scales, the keel extending to the very tip. The scales on the back are linear and narrow, but become much broader in proportion towards the tail. The occipitals are longer, and the head in front of the eye longer in proportion to the part behind it. No bands evident, even obsoletely. The other differs in all these respects: rostral low, and the keel more rounded; scales on back shorter, and anteriorly rather broad, and the disproportion with those posteriorly much less conspicuous; carinæ not extending to the tip; faint bars seen indistinctly across the black of the back, &c.

Carlisle, Pa. ♀	140+1. 49. 25.	36. 6.	S. F. Baird.

Specimens from the south differ simply in being rather darker on the sides and beneath.

Abbeville, S. C.	145+1. — 25.	26. —	Dr. J. B. Barratt.
Kempe county, Miss.	126+1. 53. 25.	28. 5¾.	D. C. Lloyd.

AMPHIBIANS.

MENOBRANCHUS MACULATUS, Barnes. *The Spotted Proteus.*

> This beautiful specimen was taken in the Hudson river, near the city of Albany, in the month of May, 1855, and presented to the State Cabinet, by Dr. VAN RENSSELAER, of Greenbush, Rensselaer county, N. Y.

This species is not described by DEKAY, in the New-York Fauna; and as the description of the *Menobranchus maculatus* of *Barnes*, by the Rev. ZADOCK THOMPSON, in his Natural History of Vermont, so correctly and accurately describes our specimen, we have thought proper to publish his description entire.

DESCRIPTION. General color dark cinereous gray, produced by minute yellowish specks on a dark bluish ground, and irregularly interspersed with circular spots about the size of a pea, of a darker hue; the throat and central part of the abdomen nearly white; a brownish stripe commencing at the nose and extending backwards over the eye; the margin of the tail often of an orange tinge, with blackish blotches near the extremity. The head is large, flattened, and the snout truncated; eyes small and far apart; mouth large; throat contracted with a transverse fold in the cuticle beneath; tongue large and fleshly; teeth small and sharp, two rows in the upper jaw and one in the lower. The gills are external, large, and each consists of three delicately tufted or fringed lobes, which, when vibrating in the water, are of a fine blood-red color; body cylindrical, covered with a smooth mucous skin; tail long, flattened and broad vertically, and rounded at the end like that of an eel; legs four, each foot furnished with four toes resembling fingers, but without nails, although the cuticle at the extremities is dark colored, having much the appearance of nails. The total length of the specimen before me, and from which the above description is made, is 12½ inches, and this is about the usual length.

HISTORY. This singular reptile was first described by SCHNEIDER about the year 1799, from a specimen obtained from Lake Champlain.* This specimen was probably obtained at Winooski falls, which were, for some time, the only known locality of this animal, and where more or less of them are now taken every spring, upon the hooks suspended on night lines for taking fishes. The fishermen formerly considered them poisonous, and when they found them upon their lines they were glad to rid themselves of them by cutting the lines and letting them go with the hook in their mouths; but they are now found to be perfectly harmless and inoffensive. This animal is seldom seen excepting in the months of April and May, and this is the season for depositing its eggs. In a specimen taken on the 13th of April, 1840, I found about 150 eggs of the size of a small pea, and apparently just ready to be extruded. The food of this reptile consists of various kinds of worms and insects. The stomach of the one above mentioned contained two hemipterous insects, each three-fourths of an inch long, the wings and bodies of which were entire; besides numerous fragments of other insects. Of the habits of this animal, very little is known. It seems to spend the greater portion of the time about the falls, concealed in the inaccessible recesses and crevices of the rocks below the surface of the water, and not to venture much abroad excepting at the season for depositing its eggs. Although it passes nearly the whole time in water, it is truly an amphibious animal, having lungs for breathing in the atmosphere, as well as branchiæ for breathing in water. It does not, however, breathe in water by receiving the water into its mouth and passing it out through the gills, in the manner of fishes, but simply by the vibrations of its branchiæ in the water. When kept in a vessel containing a large quantity of water, or in which the water is frequently renewed, it manifests but little disposition to rise to the surface for atmospheric air.

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* The following is Schneider's description. and our reptile answers to it in almost every particular.

Corpus ultra 8 pollices longum et fere pollicem, crassum, molle, spongiosum, multis poris pervium, in utroque latere tribus macularum rotundarum, nigrarum seriebus variegatum; cauda compressa et anceps, utrinque maculata, inferiore acie recta, superiore curvata, in finem teretiusculum terminatur. Caput latum et planum : oculi parvi, nares anteriores in margine labii superioris, maxillæ superioris geminæ ut inferioris dentes conici, obtusi, satis longi; lingue lata, integra, anterius soluta : apertura oris patit usque ad oculorum lineam verticalem; labia piscium labiis similia; pedes dissiti quatuor, tetradactyli omnes, absque unguiculis; ani rima in longitudinem patet; branchiæ utrinque ternæ extus propendent, appositæ superne totidem arcubus cartilagineis, quorum latus internum tubercula cartilaginea, velut in piscium genere, exasperant, &c.

But when the quantity of water is small, and not often changed, it soon finds the air in the water insufficient for its purpose, in which case it comes to the surface, takes in a mouthful of air, and sinks again with it to the bottom. After retaining the air for a time, probably long enough for the consumption of its oxygen in the lungs, it suffers it to escape through the mouth and gill openings, and it is seen to rise in small bubbles to the surface. This animal is said to be found in several places at the west, particularly in streams falling into Lake Ontario, where it is said sometimes to attain the length of two feet. The length of those taken at Winooski falls varies from 8 to 13 inches. I have never seen one which exceeded 15 inches. The best figure of our animal which I have seen published is in the annals of the N. Y. Lyceum, Vol. I, plate 16. The descriptions and figure in Dr. HOLBROOK'S American Herpetology do not answer to our Menobranchus; but as Professor G. W. BENEDICT has furnished Dr. H. with an accurate colored figure, drawn from a living specimen, by the Rt. Rev. J. H. HOPKINS, we hope to see it correctly represented in a future volume of his splendid and valuable work. We are strongly inclined to believe the animal which he describes, to be a different species from ours. Notwithstanding what he and others have said in proof of the identity of the *Triton lateralis* of SAY, the *Menobranchus lateralis* of HARLAN, HOLBROOK, and others, with the reptile described by SCHNEIDER, I am strongly inclined to the opinion that they are different species. I have therefore given the name suggested by Professor BENEDICT, and adopted by BARNES, the preference, and have described our animal under the name of *Menobranchus maculatus*, that being descriptive of our reptile, and the other not so.

FISHES.

ORDER II. ABDOMINAL.

FAMILY XXIII. SAURIDÆ.

LEPISOSTEUS BISON, Dekay. *Buffalo Bony-Pike.* Four specimens.

Dekay's New-York Fauna, Part IV, pa. 271, pl. 43, f. 139.

These specimens were taken in Chaumont bay, at the east end of Lake Ontario, Jefferson county, N. Y., in the spring of 1855. The largest specimen is forty-six inches in length. There is no perceptible difference, externally, between the males and females. GEBHARD.

SYNONYMS.

Esox osseus, Bony-scaled Pike. *Mitch.*
Lepisosteus osseus, Bony Bike. *Lacépède.*
Lepisosteus oxyurus. Rafinesque.
Lepisosteus longirostris. Cuvier.
Lepisosteus huronensis, Northern Mailed-fish. *Rich.*
Lepidosteus osseus, Bony Pike. *Agassiz.*

The following is a translation of the note of Professor AGASSIZ, in his great work "Poissons Fossiles," vol. 2, part ii, pa. 1, on the etymology of LACÉPÈDE's name "Lepisosteus;" and giving the reason for changing it to "Lepidosteus."

"The etymology of this compound name ought to have led LACÉPÈDE to write it "Lepidosteus," in conformity with the Greek mode of declining. I have corrected this little mistake of this elegant French writer, without however intending to ascribe to myself the discovery and establishment of this genus, as has been charged upon me. I make the observation on purpose to show that I am consistent in the application of my principles of nomenclature."

There are specimens of the Lepidosteus in the State Collection from Lakes Champlain, Ontario and Erie; and from a critical examination and comparison, no sensible difference is discoverable. They all belong to the species *bison* of DEKAY (*huronensis* of RICHARDSON). It is evident, therefore, that the *bison* and *platyrhincus* of DEKAY are the only species of Lepidosteus at present known as inhabiting the waters of the State of New-York.

DEKAY, in his Zoology of the State, has not given any facts in relation to the history of the Lepidosteus. To supply in a measure this omission, we make the following extracts from the Natural History of Vermont, by the Rev. ZADOCK THOMPSON.

"This singular fish was described by SAMUEL CHAMPLAIN, as an inhabitant of the Lake now bearing his name, more than 200 years ago. He called it *Chausarou*, which was probably the Indian name. The Indians assured him they were often seen eight or ten feet long, but the largest he saw was only five feet long, and about the thickness of a man's thigh. It is considered a very voracious fish; and when any of them are taken, or seen in the water, the fishermen calculate upon little success in taking other kinds. CHARLEVOIX tells us that he preys not only upon other fishes, but upon birds also; and that he takes them by the following stratagem : Concealing himself among the reeds growing on the marshy borders of the lake, he thrusts his bill out of the water in an upright position. The bird wanting rest, takes this for a broken limb, or dry reed, and perches upon it. The fish then opens his mouth, and makes such a sudden spring that the bird seldom escapes him. CHARLEVOIX also assures us that the Indians regarded the teeth of this fish as a sovereign remedy for the headache, and that pricking with it where the pain was sharpest, took it away instantly. The scales with which this fish is covered are so thick and strong, as to form a coat of mail, which is not easily pierced with a spear. They are taken only occasionally in the seine at the present day, but are said to be sometimes seen in considerable numbers lying in the marshy coves. Its flesh is rank and tough, and is not used for food. The usual length of those now taken, is from two and a half to three feet, though they are often much longer. One of the largest specimens which I have seen was taken at the mouth of Winooski river, June 16, 1838, and is now in my possession. It is 46 inches long, and when caught weighed nine and a half pounds."

EXTRA LIMITAL.

From JOHN A. GRANGER ESQ., of Canandaigua, N. Y.

A specimen of an eyeless fish (*Amblyopsis spelæus*, of DEKAY), from the River Styx, in the Mammoth Cave of Kentucky.

The following is a copy of the note accompanying the specimen.

CANANDAIGUA, Nov. 9, 1855.

DR. T. ROMEYN BECK,

DEAR SIR — I send to your care, an eyeless fish, taken in the River Styx, in the Mammoth Cave of Kentucky, and brought by me from there in May, 1844; to be presented in my name to the Natural History department of the State of New-York.

Yours, very respectfully,

JOHN A. GRANGER.

FISHES.

LIST OF FISHES,

INHABITING THE STATE OF NEW-YORK;

Sent to the New-York State Cabinet of Natural History, by the Smithsonian Institution, in May, 1855.

SUB-CLASS I. BONY FISH.

ORDER I. SPINE-RAYED.

FAMILY I. PERCIDÆ.

LABRAX RUFUS, Dekay. *Ruddy Bass.*

Dekay's New-York Fauna, pa. 9, pl. iii, f. 7. Sing-Sing, Croton river. Brackest waters. (3.) S. F. BAIRD.

CENTROPRISTES NIGRICANS, Cuv. et Val. *The Black Sea Bass.*

Dekay's New-York Fauna, pa. 24, pl. ii, f. 5. New-York bay. (2.) S. F. BAIRD.

BOLEOSOMA TESSELLATUM, Dekay. *The Tessellated Darter.*

Dekay's New-York Fauna, pa. 20, pl. xx, f. 57. Hackensack river, near Piermont. (2.) S. F. BAIRD.

BOLEOSOMA FUSIFORME, Girard.

Proc. Bost. Soc. Nat. Hist. V, 1854, pa. 41. Cedar swamp creek, Cape May Co. (2.) S. F. BAIRD.
(New species, not noticed by DEKAY.)

POMOTIS VULGARIS, Cuv. et Val. *The Common Pond-fish.*

Dekay's New-York Fauna, pa, 31, pl. li, f. 166. Sing-Sing, Croton river (N. Y.). Fresh waters. (2.) S. F. BAIRD.

POMOTIS VULGARIS, Cuv. et Val. *The Common Pond-fish.*

Dekay's New-York Fauna, pa. 31, pl. li, f. 166. Fresh waters of the State. (2.) S. F. BAIRD.

POMOTIS APPENDIX, Dekay. *The Black-eared Pond-fish.*

Dekay's New-York Fauna, pa. 32. Sing-Sing, Croton river (N. Y.). Fresh waters. (2.) S. F. BAIRD.

Centrarchus pomotis, Baird.

Ninth Rep. of Smiths. Inst. 1855, pa. 325. Cedar swamp creek, Cape May Co. Fresh waters. (2.) S. F. Baird.
(New species, not noticed in Dekay.)

Pomotis obesus, Girard.

Proc. Bost. Soc. Nat. Hist. V, 1854, pa. 40. Cedar swamp creek, Cape May Co. S. F. Baird. Atlantic Co. Fresh waters. S. F. Baird.
(New species, not noticed in Dekay.)

Pomotis obesus, Girard.

Proc. Bost. Soc. Nat. Hist. V, 1854, pa. 40. Hackensack river, near Piermont, N. Y. (3.) S. F. Baird.
(New species, not noticed in Dekay.)

Pomotis chætodon, Baird.

Ninth Rep. of Smiths. Inst. 1855, pa. 324. Cedar swamp creek, Cape May Co. Fresh waters. (2.) S. F. Baird.
(New species, not noticed in Dekay.)

Aphredoderus sayanus, Dekay. *The Spineless Perch.*

Dekay's New-York Fauna, pa. 35, pl. xxi, f. 62. Cedar swamp creek, Cape May Co. Freshwaters. (3.) S. F. Baird.

Sphyræna borealis, Dekay. *The Northern Barracuta.*

Dekay's New-York Fauna, pa. 39, pl. lx, f. 196. New-York bay. (3.) S. F. Baird.

FAMILY III. TRIGLIDÆ.

Prionotus pilatus, Storer.

Proc. Bost. Soc. Nat. Hist. II, pa. 77. New-York bay. S. F. Baird.
(New species, not noticed in Dekay.)

Prionotus pilatus, Storer.

Proc. Bost. Soc. Nat. Hist. II, pa. 77. Greenport, L. I. Marine. S. F. Baird.
(New species, not noticed in Dekay.)

Gasterosteus quadracus, Mitch. *The Four-spined Stickleback.*

Dekay's New-York Fauna, pa. 67, pl. vi, f. 18. New-York bay. (5.) S. F. Baird.

FAMILY IV. SCIENIDÆ.

Leiostomus obliquus, Dekay. *The Lafayette.*

Dekay's New-York Fauna, pa. 69, pl. lx, f. 195. New-York bay. (3.) S. F. Baird.

Otolithus regalis, Cuv. et Val. *The Weak-fish.*

Dekay's New-York Fauna, pa. 71, pl. viii, f. 24. New-York bay. S. F. Baird.

Corvina argyroleuca, Cuv. et. Val. *The Silvery Perch.*

Dekay's New-York Fauna, pa. 74, pl. xviii, f. 51. Long Island, N. Y. C. C. Brevoort.

Umbrina alburnus, Cuv. et Val. *The King-fish.*

Dekay's New-York Fauna, pa. 78, pl. vii, f. 20. New-York bay. (Young and adult.) S. F. Baird.

Pogonias fasciatus, Cuv. et Val. *The Banded Drum.*

Dekay's New-York Fauna, pa. 81, pl. xiv, f. 40. Long Island, N. Y. C. C. Brevoort.

FAMILY V. SPARIDÆ.

Sargus arenosus, Dekay. *The Sand Porgee.*

Dekay's New-York Fauna, p. 91, pl. xxii, f. 67. Long Island, N. Y. (2.) C. C. Brevoort.

Pagrus argyrops, Cuv. et. Val. *The Big Porgee.*

Dekay's New-York Fauna, pa. 95, pl. ix, f. 25. Greenport, L. I. S. F. Baird.

Pagrus argyrops, Cuv. et Val. *The Big Porgee,*

Dekay's New-York Fauna, pa. 95, pl. ix, f. 25. Long Island, N. Y. C. C. Brevoort.

FAMILY IX. SCOMBRIDÆ.

Eucinostomus argenteus, B. & G.

Ninth Rep. of Smiths. Inst. 1855, pa. 334. New-York bay. (2.) S. F. Baird.
(New species, not noticed in Dekay.)

Scomber vernalis, Mitch. *The Spring Mackerel.*

Dekay's New-York Fauna, pa. 101, pl. xii, f. 34. Long Island, N. Y. C. C. Brevoort.

Pelamys sarda, Cuv. et. Val. *The Striped Boneto.*

Dekay's New-York Fauna, pa. 106, pl. ix, f. 27. Long Island, N. Y. C. C. Brevoort.

Lichia carolina, Dekay. *The Carolina Lichia.*

Dekay's New-York Fauna, pa. 114, pl. x, f. 30. New-York bay. (4.) S. F. Baird.

Trachinotus spinosus, Dekay. *The Spinous Trachinote.*

(*Lichia spinosa*, Baird.)

Dekay's New-York Fauna, pa. 117, pl. xix, f. 53. New-York bay. (2.) S. F. Baird.

Caranx defensor, Dekay. *The Southern Caranx.*

Dekay's New-York Fauna, pa. 120, pl. xxiv, f. 72. Brooklyn, L. I. C. C. Brevoort.

Caranx chrysos, Cuv. et Val. *The Yellow Mackerel.*

Dekay's New-York Fauna, pa. 121, pl. xxvii, f. 85. Long Island, N Y. C. C. Brevoort. New-York bay. C. C. Brevoort.

Vomer brownii, Cuv. et Val. *The Blunt-nosed Shiner.*

Dekay's New-York Fauna, pa. 127, pl. xxv, f. 78. Long Island, N. Y. C. C. Brevoort.

Seriola zonata, Cuv. et Val. *The Banded Seriole.*

Dekay's New-York Fauna, pa. 128, pl. ix, f. 26. Long Island, N. Y. C. C. Brevoort.

Temnodon saltator, Cuv. et. Val. *The Bluefish.*

Dekay's New-York Fauna, pa. 130, pl. xxvi, f. 81. New-York bay. S. F. Baird.

Temnodon saltator, Cuv. et Val. *The Bluefish.*

Dekay's New-York Fauna, pa. 130, pl. xxvi, f. 81. Sing-Sing, Croton river, N. Y. Brackish water. (2.) S. F. Baird. Sing-Sing. (2.) S. F. Baird.

Rhombus triacanthus, Dekay. *The Short-finned Harvest-fish.*

(*Peprilus triacanthus*, Storer.)

Dekay's New-York Fauna, p. 137, pl. xxvi, f. 80. New-York bay. (2.) S. F. Baird.

FAMILY XII. ATHERINIDÆ.

Atherina notata, Mitch. *The Dotted Silverside.*

(*Atherinopsis notatus*, Girard.)

Dekay's New-York Fauna, pa. 141, pl. xxviii, f. 88. New-York bay. (2.) S. F. Baird.

Atherina notata, Mitch. *The Dotted Silverside.*

(*Atherinopsis notatus*, Girard.)

Dekay's New-York Fauna, pa. 141, pl. xxviii, f. 88. Sing-Sing, N. Y. Croton river. Brackish water. S. F. Baird.

FAMILY XIII. MUGILIDÆ.

Mugil albula, Lin. *The White Mullet.*

Dekay's New-York Fauna, pa. 146. New-York bay. (2.) S. F. Baird.

Mugil albula, Lin. *The White Mullet.*

Dekay's New-York Fauna, pa. 146. Long Island, N. Y. C. C. Brevoort.

FAMILY XIV. GOBIDÆ.

Gobius alepidotus, Bosc. *The Variegated Goby.*

Dekay's New-York Fauna, pa. 160, pl. xxiii, f. 70. New-York bay. S. F. Baird.

FAMILY XV. LOPHIDÆ.

Batrachus variegatus, Lesu. *The Variegated Toad-fish.*

Dekay's New-York Fauna, pa. 171. Beesley's Point, N. J. S. F. Baird. (Dekay describes this fish as *Extra-limital.*)

FAMILY XVI. LABRIDÆ.

Tautoga americana, Cuv. et Val. *The New-York Tautog.*

Dekay's New-York Fauna, pa. 175, pl. xiv, f. 39. Greenport, L. I. (2.) S. F. Baird. New-York bay. S. F. Baird.

ORDER II. ABDOMINAL.

FAMILY XVII. SILURIDÆ.

NOTURUS FLAVUS, Rafin. *Yellow Blacktail, Young Catfish.*

Dekay's New-York Fauna, pa. 187. Hackensack river. (2.) S. F. BAIRD.

FAMILY XVIII. CYPRINIDÆ.

CYPRINUS AURATUS, Lin. *The Gold Carp.*

Dekay's New-York Fauna, pa. 190. Sing-Sing, Croton river. Fresh waters. S. F. BAIRD.

LABEO GIBBOSUS, Dekay. *The Gibbous Chubsucker.*

(*Catostomus gibbosus*, Lesu.)

Dekay's New-York Fauna, pa. 194, pl. xxxii, f. 101. Riverhead, L. I. Fresh waters. S. F. BAIRD.

STILBE CHRYSOLEUCAS, Dekay. *The New-York Shiner.*

(*Leuciscus americanus*, Storer.)
(*Leucosomus americanus*, Girard.)
(*Luxilus chrysoleucas*, Agassiz.)

Dekay's New-York Fauna, pa. 204, pl. xxix, f. 91. Hackensack river, near Piermont. S. F. BAIRD.

LEUCISCUS HUDSONIUS, Dekay. *The Spawn-eater.*

(*Stolephorus hudsonius*, Coz.)

Dekay's New-York Fauna, pa. 206, pl. xxxiv, f. 109. Sing-Sing, Croton river. Brackish water. S. F. BAIRD.

LEUCISCUS CORNUTUS, Dekay. *The Redfin.*

(*Hypsolepis cornutus*, Girard.)

Dekay's New-York Fauna, pa. 207, pl. xxix, f. 92. Sing-Sing, Croton river. (2.) S. F. BAIRD.

LEUCISCUS ? CORPORALIS, Dekay. *The Corporaalen.*

(*Chilonemus corporalis*, B. & G. *The Roach Dace.*)

Dekay's New-York Fauna, pa. 213. Sing-Sing, Croton river. Fresh waters. S. F. BAIRD.

LEUCISCUS PYGMÆUS, Dekay. *The Pigmy Dace.*

(*Melanura annulata*, Agassiz.)

Dekay's New-York Fauna, pa. 214, pl. xlii, f. 134. Hackensack river, near Piermont. S. F. BAIRD.

LEUCISCUS PYGMÆUS, Dekay. *The Pigmy Dace.*

(*Melanura annulata*, Agassiz.)

Dekay's New-York Fauna, pa. 214, pl. xlii, f. 134. Sparkill, near Piermont. (3.) S. F. BAIRD.

LEBIAS OVINUS, Dekay. *The Sheepshead Lebias.*

(*Cyprinodon ovinus*, Val.)

Dekay's New-York Fauna, pa. 215, pl. xxvii, f. 84. Beesley's Point. (7.) S. F. BAIRD.

Cyprinodon parvus, B. & G.

Ninth Rep. of Smiths. Inst. 1855, p. 345. Beesley's Point, N. J. S. F. Baird.
(New species, not noticed in Dekay.)

Fundulus fasciatus, Dekay. *The Striped Killifish.*
(*Hydrargyra flavula*, Storer.)

Dekay's New-York Fauna, pa. 216, pl. xxxi, f. 98. Greenport, L. I. Marine. (4.) S. F. Baird.

Fundulus fasciatus, Dekay. *The Striped Killifish.*
(*Hydrargyra flavula*, Storer.)

Dekay's New-York Fauna, pa. 216, pl. xxxi, f. 98. Beesley's Point, N. J. (2.) S. F. Baird.

Fundulus zebra, Dekay. *The Barred Killifish.*

Dekay's New-York Fauna, pa. 218. Beesley's Point, N. J. (2.) S. F. Baird.

Fundulus zebra, Dekay. *The Barred Killifish.*

Dekay's New-York Fauna, pa. 218. Greenport, L. I. Marine. (2.) S. F. Baird.

Hydrargyra diaphana, Lesu. *The Transparent Minnow.*
(*Fundulus diaphanus*, Agassiz.)

Dekay's New-York Fauna, pa. 219. Ludley's Run. (4.) S. F. Baird.

Hydrargyra multifasciata, Lesu. *The Barred Minnow.*
(*Fundulus multifasciatus*, Cuv. et Val.)

Dekay's New-York Fauna, pa. 220. Riverhead, L. I. Fresh waters. (7.) S. F. Baird.

Hydrargyra multifasciata, Lesu. *The Barred Minnow.*
(*Fundulus multifasciatus*, Cuv. et Val.)

Dekay's New-York Fauna, pa. 220. Sing-Sing. Brackish water. (3.) S. F. Baird.

FAMILY XIX. ESOCIDÆ.

Esox reticulatus, Lesu. *The Common Pickerel.*

Dekay's New-York Fauna, pa. 223, pl. xxxiv, f. 107. Beesley's Point, N. J. S. F. Baird.

Esox fasciatus, Dekay. *The Varied Pickerel.*

Dekay's New-York Fauna, pa. 224, pl. xxxiv, f. 110. Beesley's Point, N. J. S. F. Baird.

Esox fasciatus, Dekay. *The Varied Pickerel.*

Dekay's New-York Fauna, pa. 224, pl. xxxiv, f. 110. Near Piermont, Hackensack river. (2.) S. F. Baird.

Belone truncata, Lesu. *Banded Garfish, or Silver Gar.*

Dekay's New-York Fauna, pa. 227, pl. xxxv, f. 112. New-York bay. (2.) S. F. Baird.

FAMILY XXII. CLUPIDÆ.

Clupea vittata, Mitch. *The Satin-striped Herring.*

(*Engraulis vittatus*, B. & G.)

Dekay's New-York Fauna, pa. 254. New-York bay. (2.) S. F. Baird.

Alosa tyrannus, Dekay. *The American Alewive.*

Dekay's New-York Fauna, pa. 258, pl. xiii, f. 38. Sing-Sing, Croton river. Brackish waters. (2.) S. F. Baird.

Alosa menhaden, Storer. *The Mossbonker.*

Dekay's New-York Fauna, pa. 259, pl. xxi, f. 60. New-York bay. 2 young, and 2 adults. S. F. Baird.

Alosa mattowacca, Dekay. *Autumnal Herring.*

Dekay's New-York Fauna, pa. 260, pl. xl, f. 127. New-York bay. S. F. Baird.

Alosa teres, Dekay. *The Slender Herring.*

Dekay's New-York Fauna, pa. 262, pl. xl, f. 128. New-York bay. (2.) S. F. Baird.

Chatœssus signifer, Dekay. *The Spotted Thread-herring.*

Dekay's New-York Fauna, pa. 264, pl. xli, f. 132. New-York bay. S. F. Baird.

Chatœssus signifer, Dekay. *The Spotted Thread-herring.*

Dekay's New-York Fauna, pa. 264, pl. xli, f. 132. Long Island, N. Y. C. C. Brevoort.

Elops saurus, Lin. *The Saury.*

Dekay's New-York Fauna, pa. 267, pl. xli, f. 131. Long Island. C. C. Brevoort.

FAMILY XXV. PLANIDÆ.

Platessa plana, Storer. *The New-York Flatfish.*

Dekay's New-York Fauna, pa. 295, pl. xlviii, f. 154, and pl. xlix, f. 158. New-York bay. S. F. Baird.

Platessa ocellaris, Dekay. *The Long-toothed Flounder.*

Dekay's New-York Fauna, pa. 300, pl. xlvii, f. 152. New-York bay. (2.) S. F. Baird.

Pleuronectes maculatus, Mitch. *The Spotted Turbot.*

(*Rhombus maculatus*, Girard.)

Dekay's New-York Fauna, pa. 301, pl. xlvii, f. 151. New-York bay. S. F. Baird.

Achirus mollis, Cuv. *The New-York Sole.*

Dekay's New-York Fauna, pa. 303, pl. xlix, f. 159. New-York bay. S. F. Baird.

ORDER IV. APODAL.

FAMILY XXVIII. ANGUILLIDÆ.

Anguilla tenuirostris, Dekay. *The Common New-York Eel.*

Dekay's New-York Fauna, pa. 310, pl. liii, f. 173. New-York bay S. F. Baird.

ORDER V. LOPHOBRANCHII.

FAMILY XXIX. SYNGNATHIDÆ.

Syngnathus viridescens, Dekay. *The Green Pipe-fish.*

Dekay's New-York Fauna, pa. 321, pl. liv, f. 176. New-York bay. (3.) S. F. Baird.

ORDER VI. PLECTOGNATHI.

FAMILY XXX. GYMNODONTIDÆ.

Tetraodon turgidus, Storer. *The Common Puffer.*

Dekay's New-York Fauna, pa. 327, pl. lv, f. 178. New-York bay. S. F. Baird.

SUB-CLASS II. CARTILAGINOUS FISHES.

ORDER II. PLAGIOSTOMI.

FAMILY II. SQUALIDÆ.

Mustelus canis, Dekay. *The Dog-fish.*

Dekay's New-York Fauna, pa. 355, pl. lxiv, f. 209. New-York bay. (2.) S. F. Baird.

FAMILY III. RAIIDÆ.

Pastinaca hastata, Dekay. *The Whip Sting-ray.*

Dekay's New-York Fauna, pa. 373, pl. lxv, f. 214. New-York bay. S. F. Baird.

CATALOGUE

Of the Fishes inhabiting the State of New-York (discovered since the publication of Dekay's Zoology).

CONTINUED FROM LAST YEAR'S REPORT.

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356 BOLEOSOMA FUSIFORME, Girard. Cabinet.

Cedar swamp creek, Cape May Co. S. F. BAIRD.

357 CENTRARCHUS POMOTIS, Baird. Cabinet.

Cedar swamp creek, Cape May Co. Fresh waters. S. F. BAIRD.

358 POMOTIS OBESUS, Girard. Cabinet.

Cedar swamp creek, Cape May Co.; and Atlantic Co. Fresh waters. S. F. BAIRD. Hackensack river, near Piermont, N. Y. S. F. BAIRD.

359 POMOTIS CHÆTODON, Baird. Cabinet.

Cedar Swamp creek, Cape May Co. Fresh waters. S. F. BAIRD.

360 PRIONOTUS PILATUS, Storer. Cabinet.

New-York bay. S. F. BAIRD. Greenport, L. I. Marine. S. F. BAIRD.

361 EUCINOSTOMUS ARGENTEUS, B. & G. Cabinet.

New-York bay. S. F. BAIRD.

362 CYPRINODON PARVUS, B. & G. Cabinet.

Beesley's Point, N. J. S. F. BAIRD.

CONCHOLOGY.

The following is a copy of the communication of Professor Chester Dewey, of Rochester, accompanying his donation of fresh-water shells, furnished to the State Cabinet.

"To **John Gebhard junior,**
Curator of the State Cabinet of Natural History.

I direct to your hand, the shells collected chiefly in this section of the State, for the State Cabinet. They belong to the family Naiades, usually called clams or mussels, and are named according to the synopsis of Isaac Lea, Esq. Not all those described in the State Natural History, by Dr. Dekay, have yet been found here; but some others, not before credited to the State, by any writer that I have seen, are put into the collection.

I have sent twelve species of Unio from this section, and have added seventeen species, chiefly from Ohio; three species of Margaritana of *Schumacher*, usually called Alasmodonta; and eleven species of Anodonta.

Alasmodonta arcuata, Barnes, has not occured to me in this part of the State.

While most of the species are abundant, some inhabit deep water, and are difficult of access. Two species, *Unio alatus*, and *Unio complanatus*, are in vast numbers between the lake (Ontario) and the first falls of the Genesee river, for the distance of four miles or more. I have brought up by a rake fourteen inches by four, from three to fourteen specimens. The bottom of the river, ten or fifteen rods broad, seems full of them. Indeed, a man who has often dived and examined the bottom of the Genesee in various places on the level of the lake, asserts that the bottom is literally covered with these shells. If they are as numerous in the whole breadth as I have found them in many places for a mile or two, there must be many thousands of bushels. *Unio luteolus*, is also abundant. To those, who have made more explorations, this mass of fresh-water clams may not be surprising; but it far surpassed all my anticipations. As these species have thick and strong shells, the muskrats, which devour clams, may find it difficult to break them open, and for this reason fewer may be destroyed. Certain it is, that the fragments of the thinner and more fragile shells are far more abundant along the shores of the river.

Besides the species specially noticed, Dr. Sartwell has also sent in this collection many specimens of the other species, in order to increase the varieties, or add to the localities of them in the cabinet of the State.

The mistakes of Linnæus in making the upper part of a shell the lower, and the anterior part, the posterior, has been for some years corrected. It is well known that the base or lower part of bivalves, which have locomotion, as all the naiades, is the opening or orifice on the side opposite to the hinge, and that the common and natural position of the shell is with the hinge uppermost; but, for a certain period in summer, many species are often found in pairs near each other, with the hinge side below and inclined to the horizon, and the posterior third or fourth of it standing in the mud, while the animal projects its body in part out of the shell and upwards. The animal holds this position so long that the mud becomes strongly coherent to the hinder part of the shell, so as to be washed off with difficulty."

Your obedient,

Rochester, Dec. 1855. C. DEWEY.

The following catalogue of the specimens was prepared by the donor, Professor C. Dewey, of Rochester.

LIST OF NAIADES (CLAMS),

FOUND IN WESTERN NEW-YORK, AND SENT TO THE STATE COLLECTION AT ALBANY, WITH SOME CHIEFLY FROM OHIO.

UNIO, Brug.; or rather Philipsson.

The name signifies a *pearl*, as pearls are in some species.

1 Unio alatus, Say. Dekay's New-York Fauna, Part V, pa. 195.
U. id Lamarck.
U. id Barnes.
U. id Hildreth.
U. id Conrad.
Mya alata, Wood.
U. alatus, Lea.
U. id Adams.
U. id Dekay.

I send six varieties, male and female; one large male.

Genesee river, on the level of Lake Ontario; nacre purple, deep red, or reddish yellow, splendid. The largest found here, measured in height five inches, and breadth seven. Also in the *Erie canal*, and the eastern part of the State.

2 Unio radiatus, Lam. Dekay's New-York Fauna, Part V, pa. 189, pl. 18, f. 236.
U. id Barnes.
U. id Gould.
U. virginiana, Lamarck.
Mya radiata, Gmel. Wood.
U. virginiana, Lea.
U. id Dekay.

One specimen from Genesee river; one from Crooked lake; and one from the Potomac, near Mt. Vernon, where the shore abounds with this species.

3 Unio novi-eboraci, Lea. Dekay's New-York Fauna, Part V, pa. 194, pl. 20, f. 240.

Several varieties; some well marked, but others approaching the *U. iris;* plenty in Genesee river above the rapids at Rochester.

4 Unio iris, Lea.

Six varieties well marked; and six approaching the *U. novi-eboraci,* with which it is found. Mr. Lea has said that the two may prove, on full examination, to be only one species.

5 Unio rubiginosus, Lea. (Not described by Dekay.)
U. flavus, Conrad.

Four varieties found in the Erie canal at Rochester, and not before credited to this State. It is found in Ohio, and has probably found its way from Lake Erie along the canal; for some animals have passed from Lake Erie, to the Mohawk and Hudson. The nacre is white, reddish, or yellow; but the body of the clam is a fine yellow, an uncommon color here.

6 Unio gracilis, Barnes. (Not described by Dekay.)
U. id Lea.
U. id Hildreth.
U. id Adams.
U. planus, Barnes.
U. fragilis, Swainson.

Two varieties, from Genesee river, on the level of Lake Ontario; not before credited to the State. The shell is often delicate, four inches in breadth and three in height; and the younger shells very fragile: shell much stronger in Ohio.

7 Unio luteolus, Lam. Dekay's New-York Fauna, Part V, pa. 190, pl. 20, f. 241.
U. siliquoidens, Barnes; podlike, and male.
U. id Conrad.
U. id Adams.
U. inflatus, Barnes. Well named, and female.

Many varieties, I send, differing in form and color, and radiations; one nearly black. The variety of names is obvious. Abounds in the Genesee, especially above the falls at Rochester; the longest being six inches by three.

8 Unio pressus, Lea.

U. compressus. Dekay's New-York Fauna, Part V, pa. 191, pl. 21, f. 245.

U. id Conrad. Adams.

Mr. Conrad's name had already been applid to a fossil Unio, and hence the new specific name by Mr. Lea. From the Genesee river; the Erie canal; and one from Ohio.

9 Unio complanatus, Lea. Dekay's New-York Fauna, Part V, pa. 188, pl. 22, f. 246.

U. id	Gould. Adams.
U. purpureus,	Say. Barnes. Conrad.
Mya complanata,	Solander.
Mya rigida,	Wood.

As this species is quite variable, I send a dozen or more varieties, younger and older, longer and shorter, &c. The nacre varies from white to light purple, deep reddish purple, and fine orange or reddish yellow.

I give the height and the length and breadth of several from different localities, in inches.

From the Genesee river; some shade of purple.

3.75 & 2.25; 4.25 & 2.25; 4.50 & 2.33; 4.33 & 2.25; 2.40 & 1.33; 1.10 & 0.50; 3.75 & 2.40.

From below the falls; white. 3.35 & 2.10. Purple. 4.25 & 2.25.

From the Genesee river, both above and below the falls; fine yellow. 4.20 & 2.50.

From the Erie canal. 3.70 & 2.25.

From the Delaware river. 4.10 & 2.20; 3.10 & 2.20.

From New-Jersey. 4.00 & 2.30.

This species has a strong shell.

The variety in the form has originated many names or species.

It is stated by our conchologists, that Lamarck made six or eight species from these varieties.

a Unio purpurascens, Lam. Stated by him to be from the rivers of this State. Corresponds to the prominent form.

b Unio rhombula,	Lam.	Is credited by him to the Hudson river; from which I have one measuring 3.37 & 1.87.
c Unio georgina,	Lam.	From Lake George.
d Unio carinifera,	Lam.	From the Hudson river.
e Unio coarctata,	Lam.	From the Hudson river, and much like U. carinifera.
f Unio rarisulcata,	Lam.	From Lake Champlain.
g Unio sulcidens,	Lam.	From Connecticut river; and one from the Schuylkill, measuring 2.13 & 1.33.
h Unio glabrata,	Lam.	Credited by Lamarck to the Ohio river; much resembles *U. gibbosus*, Barnes, as it was called three years after the other had been named.

From the River Potomac, one measures 3.30 & 1.60.

From South-Carolina, two measuring 2.25 & 1.25; 3.25 & 1.80.

From Delaware river, two measuring 3.27 & 1.75; 3.10 & 2.20.

From the Schuylkill (yellowish inside), one measures 2.13 & 1.13.

I have a shell from Ohio, said to be of this species, which is a monster, and measures 8.25 & 4.35 inches.

10 Unio cariosus, Say. Dekay's New-York Fauna, Part V, pa. 193, pl. 21, f. 243 and 244 (variety).

U. id Lam. U. cariosus, Gould.
U. id Barnes. U. id Lea.

A single specimen from the creek at Buffalo, furnished by Dr. Sartwell, of Penn-Yan. Not common here, but wide spread over the State.

11 Unio rectus, Lam. Dekay's New-York Fauna, Part V, pa. 195.

U. id Adams. Lea.
Unio prælongus, Barnes. Hildreth.
Mya prælonga, Wood.

A single specimen from the creek at Buffalo, and furnished by Dr. Sartwell. It is called an Ohio shell.

12 Unio rosaceus, Dekay. New-York Fauna, Part V, pa. 192, pl. 29, f. 355 (adult), 356 (young); pl. 40, f. 357 (sexual variety).

The four varieties, found in Seneca lake, were contributed by Dr. Sartwell. This lake seems to be the only locality; for this species is not to be confounded with the pink variety of *U. luteolus*, Lam., which is noticed in the synopsis of Mr. Lea, under this species.

The following species, chiefly from Ohio, are forwarded for the State Collection.

UNIO NASUTUS, Say. Dekay's New-York Fauna, Part V, pa. 191, pl. 20, f. 239.
U. id Barnes. Gould. Lea.

Potomac river, near Mt Vernon.

UNIO GIBBOSUS, Barnes. Two varieties.
(U. NASUTA, Lam.)

Grand river, below Grand rapids, Mich.

UNIO PUSTULOSUS, Lea. Two varieties. Muskingum river.
UNIO FOLIATUS, Hild. Lea. Two varieties. Muskingum river.
UNIO CORNUTUS, Barnes. Lea. One variety. Muskingum river.
UNIO VENTRICOSUS, Barnes. Lea. Two males and female. Muskingum river.
UNIO PERPLEXUS, Lea. Two varieties. Ohio.
UNIO RETUSUS, Lam. Two varieties. Ohio.
(U. TORSUS, Rafinesque.)
UNIO LACHRYMOSUS, Lea. One young specimen. Ohio.
UNIO CIRCULUS, Lea. Two varieties. Ohio.
UNIO SUBROTUNDUS, Lea. Three varieties. Ohio.
UNIO TRIANGULARIS, Barnes. Lea. One spec. Ohio.
UNIO MULTIRADIATUS, Lea. One spec. Ohio.
UNIO SECURUS, Lea. One spec. Ohio.
UNIO MITANEURUS, Raf. One spec. Ohio.
UNIO CYLINDRICUS, Say. Lea. One spec. Ohio.
UNIO ELLIPTICUS, Lea. One spec. Ohio.

MARGARITANA, SCHUMACHER. 1817.

The name relates to a pearl, as one species, at least, yields pearls.

1 MARGARITANA RUGOSA, Lea. Two varieties. Genesee river; Erie canal also.
ALASMODON RUGOSA. Dekay's New-York Fauna, Part V, pa. 196, pl. 14, f. 226.
ALASMODONTA RUGOSA, Barnes, 1818. Hild. Adams.

2 MARGARITANA MARGINATA, Lea. One specimen. Ohio.
ALASMODON MARGINATA. Dekay's New-York Fauna, Part V, pa. 196, pl. 14, f. 225.
ALASMODON TRUNCATA, Say.

3 Margaritana undulata, Lea.

Alasmodon undulata. Dekay's New-York Fauna, Part V, pa. 198, pl. 15, f. 227.

A. id Say. A. undulata, Gould.

A. id Barnes. A. id Adams.

One variety, Seneca lake; and one from Crooked lake, sent by Dr. Sartwell.

ANODONTA, Brug.

1 Anodonta gigantea, Lea.

A. grandis? Raf.

This specimen is from Seneca lake, and sent by Dr. Sartwell. A large species.

2 Anodonta pavonia, Lea.

Anodon pavonia. Dekay's New-York Fauna, Part V, pa. 203, pl. 11, f. 358. (Well described and figured.)

From Crooked lake, and sent by Dr. Sartwell.

3 Anodonta footiana, Lea. Not before credited to the State.

Two varieties from Genesee river.

4 Anodonta lewisii, Lea.

Anodon fluviatilis. Dekay's New-York Fauna, Part V, pa. 203, pl. 18, f. 234.

Anodonta fluviatilis, Gould. Adams.

A. cataracta, Say. Lamarck.

Three varieties from Genesee river. Taken the 17th Dec., from the canal; the outer gill was swollen with eggs.

5 Anodonta fragilis, Lam. Lea.

Two varieties from Cayuga lake, where it abounds.

6 Anodonta ferussaciana, Lea.

Anodon ferussaciana. Dekay's New-York Fauna, Part V, pa. 200, pl. 15, f. 230.

One variety from Genesee river. Eggs abundant in the ovaries on the 17th Dec., when taken from the canal.

7 ANODONTA SUBCYLINDRICA, Lea. Dekay's New-York Fauna, Part V, pa. 200, pl. 16, f. 229.

One variety from Genesee river.

8 ANODONTA EDENTULA, Lea. Dekay's New-York Fauna, Part V, pa. 201, pl. 16, f. 231.

A. AREOLATUS, Swainson.

Two varieties from Genesee river.

9 ANODONTA UNDULATA, Say.

ALASMODON UNDULATA. Dekay's New-York Fauna, Part V, pa. 198, pl. 15, f. 227.

A. id Gould. Lea. Adams.

A. PENNSYLVANICA. Lam.

The specimen is from Genesee river.

10 ANODONTA CYLINDRICA? Lea.

From the creek at Buffalo.

11 ANODONTA BENEDICTENSIS, Lea. Dekay's New-York Fauna, Part V, pa. 204, pl. 18, f. 235.

In Genesee river; and Lake Ontario, near the mouth of the river.

12 ANODONTA IMBECILIS, Say. Not described by Dekay.

Erie canal at Rochester; a very delicate shell, two inches or more in length.

APPENDIX.

B.

LIST

OF

MINERALS,

GEOLOGICAL SPECIMENS, AND FOSSILS,

ADDED TO THE

STATE CABINET OF NATURAL HISTORY,

FROM

JANUARY 1, 1855, TO JANUARY 1, 1856.

MINERALS.

From ALEXANDER FITCH, of Carlisle, Schoharie county.

A large and beautiful specimen of LAMELLAR SULPHATE OF BARYTES (Coxcomb spar of *Comstock*), from Cheshire, Connecticut.

From GEORGE PARK, Esq., of Binghamton, N. Y.

A fine specimen of CINNABAR (Sulphuret of mercury), from the Guadaloupe mine, near San Francisco, California.

From JACOB GROAT, of Watervliet.

Specimens of MARL, from the farm of the late FRIEND HUMPHREY, situated along the Shaker road, two miles from the city of Albany.

Specimens of PEAT, from the farm of the late FRIEND HUMPHREY, situated along the Shaker road, two miles from the city of Albany.

From J. D. DARLING, of Watervliet.

Specimens of SULPHURET OF IRON, crystallized in cubes.

From JOHN BALL, of Kent county, Michigan.

Two specimens of GYPSUM, from the Grand rapids, Michigan.

From A. D. CHESEBRO, of Guilderland, Albany county.

A STALACTITE, from a cave in the town of Guilderland.

From B. P. JOHNSON, Secretary of the State Agricultural Society.

A specimen of VOLCANIC SULPHUR (partially encrusted with lava), weighing one hundred pounds; from the sulphur mines of Ubala, New-Grenada, S. A.

This beautiful specimen was sent by E. J. TOWNSEND, Esq., of New-York, to the Museum of the State Agricultural Society; the directors of which, through their secretary, have kindly placed it in the State Cabinet.

The following is a copy of the paper accompanying the specimen.

"SULPHUR MINES OF UBALA, NEW-GRENADA.

Towards the northeast of Bogota (capital of New-Grenada), is to be found a small village, called Ubala, through which passes the high road that crosses from Bogota to the plains (Llanos) of San Martine; and taking into account the time expended by this route, the said village is about half way, for it takes three days thence to the port of Cabuyaro, and the same time to Bogota. Cabuyaro disembogues a few leagues from the port, on the river Meta (a tributary of Amazon).

The sulphur mine is situated near the village; and throughout an extent of five leagues, sulphur of the same quality has been discovered; and it is probable that a considerable part of the Cordillera, situated thereat, may yield the same product.

The method by which sulphur is procured is very simple. A layer of rich vegetable earth is taken off, under which is found a black gravelly soil, easily removed. This facility, in fact, occasions constant staving in of the earth. At the depth of 6 feet, pyrites (piratas) begin to show themselves; and at that of 12 to 15 feet are found stripes of sulphur, between thin rocks, which are easily extracted by the laborers. The width of said veins varies from a few inches up to three feet. The sulphur found therein presents different aspects : there are pieces of more than 400 pounds, so pure, so transparent, that not a single particle of extraneous matter is to be found therein. Other pieces are encrusted with particles of rock or lava, such as the sample sent, and then they present greater solidity for transportation. At other times, it is found in roundish pieces, weighing some ounces or pounds. Notwithstanding the bad system adopted in exploring the same, there have been weeks wherein six men, with only spades, hoes and crowbars, have taken out 2,500 pounds of sulphur.

The mines are surrounded with thick forests, which yield splendid timber, abundant pasturage, mines of limestone and coal.

Signed, Y. ANTOMESA."

From JOHN GEBHARD junior, of Albany.

A specimen of Calcareous Spar, from Ball's cave in the town of Schoharie.

A specimen of Fibrous Limestone (arragonite), from Ball's cave in the town of Schoharie.

A specimen of Satin Spar, from Ball's cave in the town of Schoharie.

From HIS EXCELLENCY GOVERNOR CLARK.

Two specimens of Iron Ore, from the ore beds at Clinton Prison; obtained at the depth of one hundred feet beneath the surface.

From JAMES RAY, of West-Troy.

A specimen of Coke made from the semi-bituminous coal of the Maryland Coal Measures.

The structure of the grain, and angle of a knot (branch) would render it probable that it is of the coniferous trees of the carboniferous era.

The annular rings, which show the same rate of growth of the pitch pine of Maryland of the present day, would indicate a climate much the same as now.

From Dr. J. R. ROMEYN, of Keeseville, Essex Co., N. Y.

Iron Ore (three specimens), from the Arnold bed, town of Ausable, Clinton county.

Iron Ore, from the Arnold bed (blue vein), town of Ausable, Clinton county, N. Y., six miles from Keeseville.

Iron Ore, from the Averill ore bed, at Clinton prison, Dannamora, Clinton county, N. Y.

Iron Ore, containing quartz crystals and calcareous spar, from the Averill ore bed, at Clinton prison, Dannamora, Clinton county, N. Y.

From JOHN GEBHARD junior, of Albany.

A box containing twenty-five specimens, collected from the mouth of an extinct crater in the town of Volcano, Calaveras county, California.

The following is a copy of the letter to the donor, which accompanied the specimens.

Volcano, September 30, 1855.

J. GEBHARD junior, Esq.

Dear Sir — In partial return for the gentlemanly courtesy I have ever experienced on my visits to the Geological Rooms of the State of New-York, while under your supervision; and as a mark of private esteem, allow me to present you the enclosed specimens, collected from the mouth of an extinct crater in this place.

The town of Volcano, where these specimens were collected, is rich in caves, presenting the most singular formations I have ever witnessed; and which will at some future day divide the interest now felt in the gigantic trees and stupendous waterfalls, whose grandeur marks them as wonders of the world.

Owing to the want of time, I have been prevented from pursuing my exploration as much as I could wish; but should the opportunity occur at any future time, I will give you the result of my discoveries. I hope that the accompanying specimens will prove interesting to you.

Yours truly,

J. H. WARWICK.

From Professor C. DEWEY, of Rochester.

A mass of artificial glomeration, or subcrystallization, formed in the retorts in making illuminating gas.

GEOLOGICAL, INCLUDING FOSSILS.

DONATIONS.

From the Hon. MOSES EAMES, of Rutland, Jefferson county, N. Y.

Endoceras proteiforme, Hall. Palæontology of New-York, Vol. I, pa. 216, pl. 57, f. 1.

This specimen is from the Trenton limestone, and was obtained in the town of Cape Vincent, Jefferson county, N. Y. The fragment is two feet long; and seven inches in diameter at the greater, and four and a half inches in diameter at the lesser end. The siphuncle, which is well defined at the lesser end of the specimen, is sub-marginal, and two and one fourth inches in diameter.

The surface of the fossil is covered with impressions of crustacea, bivalve shells, corallines, &c., characteristic of the Trenton limestone. Among them, the most important and interesting is the matrix of a trilobite belonging to the genus Acidaspis of *Murchison* (Odontopleura of *Emmrich*); it is three-fourths of an inch in length, and distinctly exhibits the fimbriæ, on the outer margin of the maxillæ; the elongated spines at the posterior angles of the cephalic shield; the short spines at the sides of the body, produced by an elongation of the lateral articulations; and the spinous margin of the caudal shield.

Professor John Locke, in the American Journal of Science (Vol. 44, pa. 346, and also in vol. 45, pa. 223), describes a new trilobite, obtained in the rock formation near Cincinnati (which is equivalent to the Trenton limestone of New-York), as the *Ceraurus crosotus;* and with which I consider our specimen identical.

An examination of Professor LOCKE's description and drawings will at once determine that his trilobite is not a *ceraurus*, but must either be placed in the genus *Acidaspis* of Murchison, or *Odontopleura* of Emmrich; both of which may be regarded as synonyms, as the characteristics of either genus will cover the specimen.

The question then occurs, Shall the genus of Murchison or Emmrich be adopted? M. BARRANDE has proved that Murchison's name has priority in regard to time; this fact decides the question in favor of Murchison. I also prefer the name of Murchison, for the following additional reasons:

1st. Professor TIMOTHY A. CONRAD, the Palæontologist to the New-York survey, was the first American author who adopted Murchison's genus; and in his annual report on the palæontology for the year 1839 (third report, pa. 204), describes a true *Acidaspis* (*Acidaspis tuberculatus*) as occuring in the Delthyris Shaly limestone; which is the first notice of the occurrence of Murchison's genus on the western continent.

2d. Professor JAMES HALL, the present State Palæontologist, adopts Murchison's genus; and in volume 1 of the New-York Palæontology, pa. 240, describes a trilobite as the *Acidaspis trentonensis*, from the rock formation at the Bay of Quinte on Lake Ontario, which, from its associated fossils, he considers equivalent to the Trenton limestone.

3d. Professor SHUMARD, the Palæontologist of Missouri, also adopts Murchison's generic name; and in the second annual report of the geological survey of Missouri (1854), part 2, pa. 200, describes a new species, *Acidaspis halli* (in honor of Professor HALL), from the Cape Girardeau limestone, which the geologists of Missouri consider as belonging to Murchison's Upper Silurian system, and to the lower Helderberg group of the New-York geologists.

Adopting the genus of Murchison, I therefore propose for Professor LOCKE's specimen the name of *Acidaspis crosotus*, Locke; retaining Professor LOCKE's specific name of *crosotus* (from the Greek word signifying *fringed*), as descriptive of the fossil, and in accordance with the established rules of scientific nomenclature. G.

In accordance with the preceding view of the subject, our fossil is catalogued,

ACIDASPIS CROSOTUS, Locke. *The Fringed Acidaspis.*

From the Trenton limestone, in the town of Cape Vincent, Jefferson county, N. Y.

From Professor CHESTER DEWEY, of Rochester, N. Y.

A new fossil (FUCOID?) undescribed. From the Medina Sandstone.

From DARIUS WHEELER, of Albany.

SILICIFIED WOOD, from Eldorado county, California. Mr. Wheeler asserts that this fragment was broken from a silicified tree eighteen inches in diameter, and twenty-five feet in length, lying on the side of a hill 250 feet high, and about one-third of the distance from the base upwards.

From the Hon. JAMES S. CAMPBELL, of Cherry-Valley, Otsego county, N. Y.

Four specimens of GLAZED SLATE, from the Marcellus shale; obtained from the farm of the Hon. James S. Campbell, of Cherry-valley, Otsego county. These specimens, at the request of the donor, are placed in the case containing the minerals, &c. of Otsego county.

From the Hon. SILAS M. BURROUGHS, of Medina, Orleans co., N. Y.

A slab of MEDINA SANDSTONE, covered with the *Arthrophycus harlani*, (fossil plant), of HALL. Palæontology of N. Y., Vol. II, pa. 5, pl. 1, f. 1; pl. 2, ff. 1a, 1b, 1c.

From IRA SAYLES, Principal of the Rushford Academy, at Rushford, Allegany county, N. Y.

A box of Geological Specimens, taken mostly from the drift formation, in the vicinity of Rushford, Allegany county, N. Y.

The following extract is taken from a letter accompanying the specimens, directed to Dr. T. ROMEYN BECK; dated at Rushford, August 15, 1855:

DEAR SIR—This morning I send to your address a box of geological specimens, taken mostly from our drift : there are some, however, from the rock in place. I have not sought out glaring specimens; for I deem them of no more account, geologically, than those of a humbler sort.

We have some quite large boulders, but they are not very abundant. I saw some yesterday which would undoubtedly weigh twenty tons. All these larger ones are Felspathic Granite, with large crystals of felspar in a matrix of massive quartz, with very little mica.

Of the specimens I send you, there is one of a peculiar kind, evidently with an organic nucleus : one is from a mineral spring in our neighborhood; and one is from a swamp, the earthy oxide of manganese, generally known under the name of *wad*.

I have not sent many besides these, from the rock in place. At some other time, I may send one wholly made up from this. We have some scattering fragments of the old red sandstone on the tops of our hills. In the eastern towns of this county, it is sufficient to form quarries on the hill tops.

Very respectfully,

IRA SAYLES.

BY PURCHASE.

A large slab of Medina Sandstone, covered with fragments of branches of a fossil plant; *Arthrophycus harlani* of Hall. See Palæontology of New-York, Vol. II, pa. 5, pl. 1, ff. 1; pl. 2, f. 1a, 1b, 1c.

Tooth of a Fossil Elephant. The locality from which it was obtained, is not known.

APPENDIX.

C.

ADDITIONS

TO THE

HISTORICAL AND ANTIQUARIAN COLLECTION,

IN THE

STATE CABINET OF NATURAL HISTORY,

FROM

JANUARY 1, 1855, TO JANUARY 1, 1856.

HISTORICAL AND ANTIQUARIAN COLLECTION.

DONATIONS.

FROM THEODORE S. STICKLER, OF PORT SCHUYLER, ALBANY COUNTY, N. Y.

A mass of **Glass Beads**, cemented together by heat. Taken from the ruins of the great fire in the city of New-York, which occurred on the fifteenth day of December, 1835.

FROM A. D. CLARK, ESQ., OF TICONDEROGA, BY J. COLLINS WICKS.

An **Iron Axe**, found about two feet below the surface on the inside of the intrenchment upon "Mount Hope," Ticonderoga. This intrenchment constituted the outwork of Fort Ticonderoga.

FROM WINSLOW BATES, OF CALDWELL, WARREN CO., N. Y.

A **Spade** dug up near the Fort "William Henry" grounds, with the indentation of a bullet on the same.

FROM AARON WEDEMAN, OF BETHLEHEM, ALBANY CO.

An **Indian Relic**, found in the town of Bethlehem, Albany county, N. Y. This beautiful relic is composed of a compact variety of green slate. It is made in the form of a hatchet with two edges, with a hole in the center for the insertion of a handle; length four inches, width one and a half inches. Relics of similar form have been generally called stone hatchets. Squier and Davis, in their work on the Ancient Monuments of the Mississippi valley (Vol. one of the Smithsonian Contributions to Knowledge), in speaking of similar relics, justly remark, "It is clear, nevertheless, both from their form and material, that they were not designed for use. They may be regarded as having been intended for ornament or display."

FROM JOHN E. STEARNS, OF CASTLETON, RENSSELAER CO.

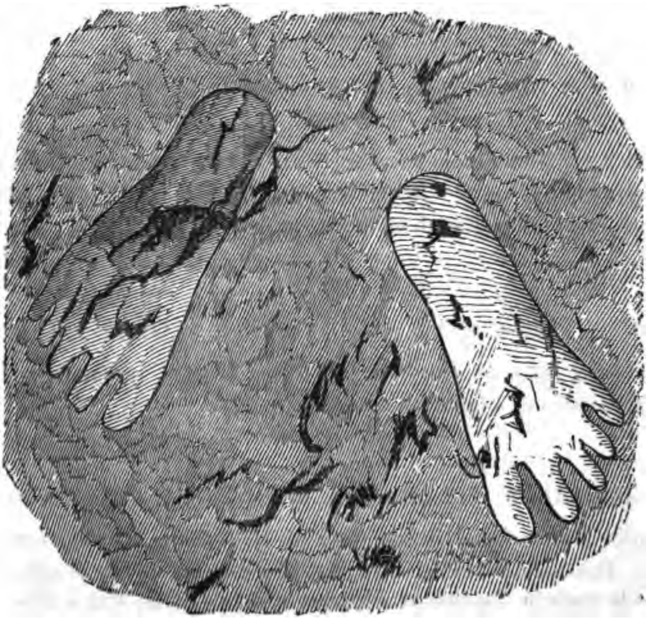
A BILL of the continental currency for sixty dollars, issued "according to a resolution of Congress of the 14th January, 1779."

FROM PROFESSOR DAVID DALE OWEN.

A plaster cast of the impressions of TWO HUMAN FOOT-PRINTS, taken from the rocks on the banks of the Mississippi, at the city of St. Louis.

This cast was received from Professor OWEN several years since; but from inadvertence, the donation has not been heretofore acknowledged.

The annexed woodcut (reduced in size from Professor OWEN's drawing), will give a correct idea of the appearance of these foot-prints.



The deep interest manifested by the public, when the discovery was first announced; the conflicting views of various authors as to the true cause of their origin; and the doubt that still exists in many minds, have induced us to make the following extracts from an able paper ("Regarding Human Foot-prints in solid limestone"), which originally appeared in Silliman's

Journal, from the pen of Professor David Dale Owen (the donor of the specimen). The great length of the article precludes our copying of it entire.

"The occurrence of representations of human feet in solid rock, has lately excited considerable attention, both in this country and in Europe. The intimate connection of the subject with those great problems, the age of our race, and the gradual peopling of our globe with animated beings, invests it with additional interest, in the eyes not only of the scientific explorer, but of the general reader also.

"Mr. Schoolcraft, in the year 1822, first called attention, through the columns of Silliman's Journal, to these impressions; the German Professor Leonhard, of Heidelberg, discusses the matter in his popular lectures, now in the course of republication in this country, by Professor F. Hall; Dr. Mantell, in his "Wonders of Geology," also speaking of the same foot-prints, says that he has requested Professor Silliman to ascertain the nature and age of the rock in which they appear; and a correspondent, in a recent number of this (Silliman's) journal, calls for information on the same subject.

"These various observations and enquiries, and all others of a similar character which have met my eye, expressly refer to a single specimen; the only one, it would seem, hitherto discovered; namely, a slab of limestone originally found on the western bank of the Mississippi river at St. Louis, quarried for Mr. Frederick Rapp in the year 1819, and by him removed to the German settlement of Harmony in Indiana, where it became a frequent object of visit and examination among curious travelers. There Schoolcraft saw and described it; his article, above referred to (and from which Mantell tells us he derives his information), commences thus:

"'I send you a drawing of two curious prints of the human foot in limestone rock, observed by me last summer at Harmony, on the Wabash; together with a letter of Col. Benton on the same subject. The slab containing these impressions was originally quarried on the west bank of the Mississippi river at St. Louis, and belongs to the older flœtz range of limestone, which pervades that country to a very great extent.' Leonhard, as a note by his editor reminds us, refers, also, as his sole authority, to the article here quoted, and of course to the specimen in question. That specimen is now in my possession; and inasmuch as it has attracted the observation even of foreign geologists, and has given rise to not a little discussion and contrariety of opinion among scientific men, I feel called on to contribute what information I possess relative to its history and description; more especially as I have recently obtained evidence sufficiently conclusive touching its precise geological character.

"The best information I can furnish in regard to the exact spot of its original location, and the circumstances by which it came into the possession of Mr. RAPP, is to be found in the subjoined extract from a letter written by the gentleman under whose inspection it was quarried, then a resident of St. Louis, but now of Cincinnati, Mr. PAUL ANDERSON. This letter is dated October 11, 1841, and is a reply to one which I addressed, in the course of last autumn, to Mr. BAKER, Mr. RAPP's man of business, who was a resident of Harmony at the time of the purchase, and in which I had requested of him to procure for me what information he could on the subject.

" Mr. ANDERSON, writing to Mr. BAKER, says :

"'The letter of Mr. DAVID DALE OWEN, of the 26th ult., enclosed in yours of the 8th inst., was duly received by me here.

"'Well sir, as to the limestone slab that Mr. FREDERICK RAPP obtained of me sometime in 1819 at St. Louis, I will tell you its history. The year after I was located in St. Louis, during the extreme low water of the Mississippi, I was shown the imprint of human feet, that was in the limestone rock on the *very margin* of the river, and which had been only seen by the old inhabitants there very few times; as it was said by them that it was not more than once in the period of ten years or so, that the river fell to its then stage. This rock lay about opposite the center of the city proper, and seemed to have been polished smooth by the attrition of the water. There was no rock lying on it, as it was the lower ledge of the stratified limestone that reached, by steps, to the bluff of limestone rock that ranged along the foot of the river lots of the city. This bluff of stratified rock was seemingly from ten to twenty feet high, and from twenty to forty yards from the margin of the river at extreme low water mark, all along the city. This bluff has been quarried out, and a fine range of three story stone warehouses erected there on the river front. A street, too, of sixty feet wide has been laid off, besides a graduated macadamized wharf on the outside of that again to low water mark.

"'A Mr. JOHN JONES, who claimed a sort of ownership in the rock as being the first discoverer of it *that season*, was employed by me to cut out the slab for Mr. FREDERICK RAPP, who was then at St. Louis on a business visit. I paid JONES (to the best of my recollection) one hundred and eighty dollars for the slab, and shipped it around to New-Harmony, to Mr. RAPP.'

"These extracts fully explain the circumstances under which the slab was originally obtained by Mr. RAPP. When that gentleman, in the year

1824, sold the New-Harmony estate to my father, the slab also came into my father's hands, and ultimately into the possession of the late WILLIAM MACLURE. After his decease, it was presented to me by his executors, and is now preserved in my museum of natural history at New-Harmony.

"This slab itself is a ponderous mass of solid limestone, weighing upwards of a ton. Although fossils had been observed in the vicinity of its original location, yet until lately no remains had been discovered on the specimen itself. In preparing to remove it, however, from Mr. MACLURE's residence to my laboratory, observing a horizontal fissure which extended entirely across the rock, I split off by the aid of wedges a continuous layer, some two or three inches thick, from its inferior surface. This operation, besides materially facilitating its transportation, discloses, as I had hoped it would, some familiar fossil shells; and I subsequently discovered a good many more by reducing the detached portion into small hand specimens. I was thus enabled definitely to determine the age of the rock.

"The fossils obtained (four species of *Producta*), proved on examination to be the same species which I had often previously observed at Leavenworth, in Indiana, on the Ohio river, and elsewhere, in a rock, the exact geological position of which I had already satisfactorily ascertained. This stratum lies from ten to twenty feet below the lowest members of our true coal measures, and is considered the equivalent of the mountain limestone of Europe.

"So much for the age of the rock in which these foot-prints are found. The question next presents itself, are they true fossils, or are they the work of art?

"To aid in the solution of this question, I have given (in the plate accompanying this article) a correct representation of the slab, with the foot-prints and other marks, as they at present appear. That during the twenty-two years since it has been quarried, no material or appreciable alteration seems to have occurred, may be inferred from the following communication from a gentleman now residing here, to whom I am indebted for many valuable additions to my geological cabinet, and who visited and critically examined the specimen sixteen years ago, in company with several distinguished naturalists:

"'In reply to your enquiries regarding the now famous limestone slab with its human foot-prints, I have to say, that in the year 1826, I visited and examined it repeatedly and minutely, and have a perfectly distinct recollection of its appearance at that time. I then compared the foot-prints with my own, placing my naked foot on the impressions. They correspond very accurately both in outline and in the depressions, answering to the principal muscles of the foot and toes, except that the toes were somewhat more widely spread than mine. Mr. MACLURE, Dr. TROOST, SAY, and Mr. LESUEUR, then residents of Harmony, examined the rock at the same time. They all agreed in opinion as to the artificial origin of the tracks, with good reason, I think; for the task seems to me more easy than the fabrication of many of our native vases and other antiquities.

"'I can say with confidence that there is no perceptible difference between the appearance of the tracks now, and in 1826, when I first saw them; and I find that others, who were then in the habit, like myself, of seeing the specimen daily, coincide with me in this opinion.

SAMUEL BOLTON.'

"Messrs. MACLURE, SAY, TROOST, and LESUEUR, appear thus to have agreed as to the artificial origin of these foot-prints; yet among the various writers who have broached the subject, others have expressed a very different opinion.

"Mr. SCHOOLCRAFT, in the article already referred to, and which first introduced the matter to the scientific world, expresses his unqualified conviction that they are true fossils; and remarks, that "every appearance will warrant the conclusion, that these impressions were made at a time when the rock was soft enough to receive them by pressure; and that the marks of feet are natural and genuine. Such was the opinion of Governor CASS and myself, formed upon the spot, and there is nothing that I have subsequently seen to alter this view; on the contrary, there are some corroborating facts calculated to strengthen and confirm it.

"The learned MANTELL, the distinguished geologist of southeastern England, coincides with SCHOOLCRAFT as to the true fossil character of the foot-prints; but though he expressly refers to SCHOOLCRAFT'S article, he seems to have overlooked the character of the rock; for he speaks of the impressions as being made in *sandstone.* The passage occurs in his "Wonders of Geology," already referred to, at pa. 76, where he has copied SCHOOLCRAFT'S drawing of the foot-prints.

"After giving the plate, he adds: 'The above figure is an exact copy of the original drawing, and exhibits the impressions of the two corresponding human feet, placed a short distance from each other, as of an individual standing upright, in an easy position. The prints are described as presenting the perfect impress of the feet and toes, exhibiting the form of the muscles, and the flexures of the skin, as if an accurate cast had been taken in a soft substance. They were at first supposed to have been cut in the stone by the native Indians, but a little reflection sufficed to show that they were beyond the efforts of those rude children of nature; since they evinced a skill and fidelity of execution, which even my distinguished friend, Sir FRANCIS CHANTREY, could not have surpassed. No doubt exists in my mind, that they are the actual prints of human feet in soft sand, which was quickly converted into solid rock by the infiltration of calcareous matter.

"With opinions so variant before me, and such names arrayed on either side of the question, it is with diffidence that I shall proceed, after describing the slab in my possession, to venture my opinion as to the probable origin of the impressions it contains; yet I must be permitted to remark, that I am unable fully to endorse the unqualified expressions of admiration in regard to the matchless workmanship and inimitable fidelity of execution which the inspection of these foot-prints has called forth in various quarters. I may be supposed to regard the specimen which is the subject of these eulogiums, certainly with no unfavorable eyes. To find myself the possessor of a fossil unique in the cabinets of Europe or America, or even of a specimen of aboriginal sculpture that should put to shame the best efforts of CHANTREY's chisel, was a prospect calculated to quicken my perceptions of its merits and beauties, or to bias my judgment in favor of its genuine character. Nevertheless, after the most critical inspection, I regret to be impelled to the confession, that I see no creditable display of anatomical knowledge or artistical skill; nothing more than we may fairly attribute to the observant and ingenious Indian, dependent for his very life, as the forest warrior daily is, on an intimate and familiar acquaintance with tracks of every description, and more especially, with those of his own race. The representation is, indeed, easy and natural; at the heel, at the ball of the foot, at the outer edge of the sole opposite the instep, the impressions of the muscular elevations are given with fidelity, yet without any delicate details, minute lines of demarcation between the muscles, flexures of the skin or similar minutiæ.

"The appearance and dimensions of the foot-prints coincide otherwise with SCHOOLCRAFT's description of them. The greatest depth of the impression is about one-sixth of an inch. The rock, as already stated, is a very compact limestone of a gray color, and its general surface has been ground down level, and even partially polished by the attrition of sand and water. The polish has extended to the impressions equally with the rest of the slab, and gives to them a smooth and finished appearance.

"After a close inspection of the slab itself, a careful examination into its geological position, age, and origin, and a partial review of the arguments of the various writers already quoted, I have come to the conclusion, that the impressions in question are not fossils, but an intaglio of artificial origin. This opinion is based on the following considerations :

1st. Because the foot-prints are not continuous, but isolated.

2d. Because (as it would seem) this is a solitary instance of human foot-prints in solid limestone.

3d. Because of the difficulty in conceiving the sudden consolidation of compact limestone rock, after having received, while in a plastic state, such impressions.

Lastly, and chiefly, because of the age, nature, and position of the rock, and because no human remains whatever have hitherto been discovered in any similar formation.

"The isolated position of our foot-prints affords a strong presumption against their fossil origin; and we can hardly imagine under what circumstances a man could impress, thus evenly and naturally, a single pair of foot-prints on a soft and yielding surface, without leaving thereon other traces of his steps.

"The limestone stratum containing them is not a partial bed, but an extensive layer, necessarily deposited at one and the same time. There seems, therefore, every probability that other foot-marks would have been discovered on adjacent parts of the rock, had those under consideration been actually made by human feet in plastic calcareous matter.

"If the specimen in my possession be unique of its kind, that circumstance also is strong evidence against its fossil origin; and it would appear that it is so. Every writer, American or European, who treats of impressions of human tracks in solid rock, alludes to the specimen which forms the subject of the present article; all expressly referring to the St. Louis locality, and apparently unacquainted with any other. Yet we have already seen, that in that vicinity, none but the foot-prints in my possession have been discovered.

"But all these arguments are weak, compared with that based on the origin, position and age of the rock under consideration, and on the fact, that no human remains of any description have ever been discovered in any similar formation.

"We have ascertained that the organic remains taken from the slab itself are marine shells. We find, moreover, that it is overlaid by other beds of limestone containing fossils, also the former inhabitants of an ancient ocean. The inference is inevitable, that these various beds were deposited at the bottom of the sea. But unless we imagine the stratum containing the foot marks to have been raised from the bed of the ocean, while still in a plastic state, to have received the impress of the human foot, and to have been again submerged, (the tracks remaining uneffaced until gradually covered by other beds of limestone), how can we even conjecture that these prints were impressed on the nascent rock?

"No remains of man or his work have ever yet been found, except in the most recent deposits. Yet the limestone composing our slab is of immense antiquity; anterior, even to the coal formation. Between this ancient limestone and the recent one of Guadaloupe, as well as all other rocks in which have been detected any traces of man or his handicraft, there intervene six great geological formations : the coal measures, the new red sandstone, the lias and oolite, the chalk, tertiary, and the diluvium. These deposits form a geological series commonly three or four thousand feet in thickness, and embrace six vast and strongly marked epochs, during each of which, distinct races of animals have successively arisen, existed, and become extinct. The time necessary to these changes we can hardly conceive, much less calculate. Add the supposition usually entertained by geologists (based on the gigantic and ultra-tropical vegetable growth necessary to produce the superincumbent beds of coal), that the temperature of the globe and its atmosphere during the deposition of these secondary formations was unfit for animals with lungs, and the idea of a human fossil existing in ancient limestone must appear at variance with the best ascertained facts which the industry of the modern geologist has supplied to us, and with the most legitimate inferences to be deduced therefrom. Nothing less than some fossil phenomenon of a character so uneqivocal that its origin admits of but one explanation, ought, under these manifold difficulties and improbabilities, to win our confidence or command our belief.

"The slab which is the subject of these enquiries was quarried, it will be recollected, from a ledge of rock at a point on the very edge of the stream when at its lowest stage. The present site of St. Louis was a common gathering place of the neighboring Indians, as the adjacent mounds abundantly testify. May we not, then, with some degree of confidence, hazard the conjecture, that our impressions were an aboriginal record of extreme low water, as observed by the Indian race, at their favorite resort on the banks of the Father of Waters—their own unequalled and magnificent *Me-scha-si-pi?*"

FROM JOHN TEN EYCK, OF THE ALBANY EVENING JOURNAL.

A sheet of the PAPER (water marked), which was made for the Bank of Albany, in the year 1792; and on which all the bills of the bank, from that time to the year 1855 (when it had all been used), were printed.

FROM BARNET C. HUMPHREY, OF THE CITY OF ALBANY.

A sheet of the BILLS (in blank), of the "Syracuse Company," of which the late William James was president.

APPENDIX.

D.

MATERIALS BELONGING TO THE STATE,

WHICH ARE INTENDED TO BE USED IN COMPLETING THE PUBLICATION OF THE

PALÆONTOLOGY,

Received into the Geological Rooms, since the first day of January 1855.

DEPARTMENT OF PALÆONTOLOGY.

Received, March 3, 1855, of Richard H. Pease, three thousand printed impressions each, from Plates 66, 67, 89, 90, 105 and 116, for the third volume of the Palæontology. The number of figures on the several plates is as follows, viz :

Plate No. 66,	Upper Pen. Limestone,	11 figures.
No. 67,	Upper Pen. Limestone,	12
No. 89,	Oriskany Sandstone,	7
No. 90,	Oriskany Sandstone,	7
No. 105,	Oriskany Sandstone,	6
No. 116,	Oriskany Sandstone,	4
	Total,	47

The paper on which the preceding plates are printed, weighs six hundred and seventy-four pounds.

Received, March 10, 1855, of John E. Gavit, three thousand printed impressions each, from Plates 34 and 38, for the third volume of the Palæontology. The number of figures on the two plates is as follows, viz :

Plate No. 34,	Shaly Limestone,	49 figures.
No. 38,	Shaly Limestone,	49
	Total,	98

The paper on which the preceding plates are printed, weighs two hundred and ten pounds.

Received, August 31, 1855, of Richard H. Pease, three thousand printed impressions, from each of the following plates, for the third volume of the Palæontology, viz:

Plate No. 54,	Tentaculite and Pent. Limestones,	26 figures.
No. 55,	Delthyris Shaly Limestone,	21
No. 65,	Shaly and Upper Pen. Limestones,	11
No. 68,	Upper Pentamerus Limestone,	7
	Total,	65

The paper on which the preceding plates are printed, weighs four hundred and seventy-two pounds.

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